

Remarks

Examiner Pham is thanked for the thorough Office Action.

In the Claims

The claims have not been amended.

Claim Rejections

**The Rejection Of Claims 1, 46, 69 And 71 Under 35 U.S.C. §102(b) As Being
Anticipated By Kondoh et al. (U.S. Patent No. 5,448,114)**

The rejection of claims 1, 46, 69 and 71 under 35 U.S.C. §102(b) as anticipated by Kondoh et al. (U.S. Patent No. 5,448,114) (the '114 Kondoh Patent) is acknowledged.

**The Rejection Of Claims 2, 9, 11 To 13, 19, 24, 31, 33 To 35, 41, 47, 54, 56 To 58, 64 And
70 Under 35 U.S.C. §103(a) as Being Unpatentable Over Kondoh et al. (U.S. Patent No.
5,448,114) As Applied To Claims 1, 46, 69 And 71 Above, And Further In View Of The
Following Reasons.**

The rejection of claims 2, 9, 11 to 13, 19, 24, 31, 33 to 35, 41, 47, 54, 56 to 58, 64 and 70 under 35 U.S.C. §103(a) as being unpatentable over Kondoh et al. (U.S. Patent No. 5,448,114) (the '114 Kondoh Patent) as applied to claims 1, 49, 69 and 71 above, and further in view of the following reasons is acknowledged.

The Rejection Of Claims 3 To 8, 10, 16, 20 To 23, 25 To 30, 32, 38, 42 To 45, 48 To 53, 55, 61 And 65 To 68 Under 35 U.S.C. §103(a) as Being Unpatentable Over Kondoh et al. (U.S. Patent No. 5,448,114) As Applied To Claims 1, 2, 9, 11 To 13, 19, 24, 31, 33 To 35, 41, 46, 47, 54, 56 To 58, 64 And 69 To 71 Above, And Further In View Of Lee et al. (U.S. Patent No. 6,642,136 B1 And The Following Reasons.

The rejection of claims 3 to 8, 10, 16, 20 to 23, 25 to 30, 32, 38, 42 to 45, 48 to 53, 55, 61 and 65 To 68 under 35 U.S.C. §103(a) as being unpatentable over Kondoh et al. (U.S. Patent No. 5,448,114) (the '114 Kondoh Patent) as applied to claims 1, 2, 9, 11 to 13, 19, 24, 31, 33 to 35, 41, 46, 47, 54, 56 to 58, 64 and 69 to 71 above, and further in view of Lee et al. (U.S. Patent No. 6,642,136 B1 (the '136 Lee Patent) and the following reasons is acknowledged.

Applicants' wish to briefly point up the claimed features of their invention which are believed to be not shown nor obvious from the teachings of known references in this field. The claims all clearly define: (1) a die comprising a substrate and

one or more "pillar structures" (within the meaning of the disclosure of the instant specification and Figures, i.e. "pillar structure(s) 34") formed over the substrate in a pattern wherein at least one of the one or more pillar structures are bi-layer after reflowing having a lower lead-free portion and a coextensive upper solder material portion; and (2) a method of forming such a die.

However, the '114 Kondoh Patent does not disclose "at least one of the one or more pillar structures are bi-layer **after reflowing** having a lower lead-free portion and a **coextensive** upper solder material portion" (emphasis added) as claimed in the pending claims (see independent claims 1 and 46, e.g.). The Examiner cites Kondoh at the "first extracted passage" at page 2 of the instant Final Office Action vis a vis Fig. 19 and then cites additional passages from Kondoh as teaching the structure of Fig. 19 may be formed "after reflowing." Whether or not Applicants agree with this reasoning, Kondoh's Fig. 19 does not disclose or show, inter alia, "a lower lead-free portion and a **coextensive** upper solder material portion".

The Merriam-Webster's Collegiate® Dictionary, Tenth Edition, © 2001 by Merriam-Webster, Incorporated at page 222 defines coextensive as "having the same spatial or temporal scope or boundaries". For example, see Fig. 7 of the instant invention wherein the Cu pillar layer/solder layer 26/28 are illustrated in an exemplary embodiment as being coextensive, i.e., for example, their respective sides have the same spatial boundaries. The Kondoh Fig. 19 structure illustrates a "core layer 44 of copper or

nickel” with, a “solder layer 45 surround[ing] the core layer 44 in the center.” Col. 5, lines 19 to 24 of Kondoh. Thus, by definition, the Kondoh solder layer 45 is not coextensive with the Kondoh core layer 44 as they do not have “the same spatial or temporal scope or boundaries” as defined by Merriam-Webster’s Collegiate® Dictionary. Thus claims 1, 46, 69 and 71 recitation of, inter alia, “a lower lead-free portion and a coextensive upper solder material portion” distinguishes over Kondoh under 35 U.S.C. §102(b) because Kondoh does not show, inter alia, such a coextensive structure.

Claims 2, 9, 11 to 13, 19, 24, 31, 33 to 35, 41, 47, 54, 56 to 58, 64 and 70 distinguish over Kondoh as applied to claims 1, 46, 69 and 71 above and further in view of the reasons put forth by the Examiner under §103(a) for the above reasoning and further because: the prior art lack a suggestion that the reference should be modified in a manner required to meet the claims; the Examiner has made a strained interpretation of the reference that could be made only by hindsight; and the Examiner has not presented a convincing line of reasoning as to why the claimed subject matter as a whole, including its differences over the prior art, would have been obvious; Kondoh teaches away from the claimed invention.

Claims 3 to 8, 10, 16, 20 to 23, 25 to 30, 32, 38, 42 to 45, 48 to 53, 55, 61 and 65 To 68 distinguish over Kondoh as applied to claims 1, 2, 9, 11 to 13, 19, 24, 31, 33 to 35, 41, 46, 47, 54, 56 to 58, 64 and 69 to 71 above, and further in view of Lee under

§103(a) for the above reasoning and further because: the prior art lack a suggestion that the reference should be modified in a manner required to meet the claims; the Examiner has made a strained interpretation of the reference that could be made only by hindsight; the Examiner has not presented a convincing line of reasoning as to why the claimed subject matter as a whole, including its differences over the prior art, would have been obvious; Kondoh teaches away from the claimed invention; and the prior art references do not contain any suggestions (express or implied) that they be combined, or that they be combined in the manner suggested. Further, the Examiner does not cite Lee to overcome the deficiencies of Kondoh vis a vis the required "coextensive" claim language.

Therefore claims 1 to 13, 16, 19 to 35, 38, 41 to 58, 61 and 64 to 71 are submitted to be allowable over the cited references and reconsideration and allowance are respectfully solicited.

CONCLUSION

In conclusion, reconsideration and withdrawal of the rejections are respectively requested. Allowance of all claims is requested. Issuance of the application is requested.

Docket: APS 03 - 002C
S/N: 10/682,054

It is requested that the Examiner telephone Stephen G. Stanton, Esq. (#35,690) at (610) 296 - 5194 or the undersigned attorney/George Saile, Esq. (#19,572) at (845) 452 - 5863 if the Examiner has any questions or issues that may be resolved to expedite prosecution and place this Application in condition for Allowance.

Respectively submitted,

A handwritten signature in black ink, appearing to be 'SBA', written over a horizontal line.

Stephen B. Ackerman
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